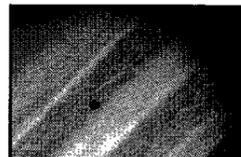




The STS-79 astronauts document in pictures the first crew exchange on orbit. Photos on Page 3.



The Hubble Space Telescope captures a rare view of Jupiter's moon Io. Story on Page 4.

Space News Roundup

Vol. 35

October 11, 1996

No. 40

Space station moves forward with sequence

By Kyle Herring

NASA and its international partners are moving forward with a revised assembly sequence for the International Space Station that maintains major program milestones, including the first element launch, initial human habitation and the completion of U.S. assembly.

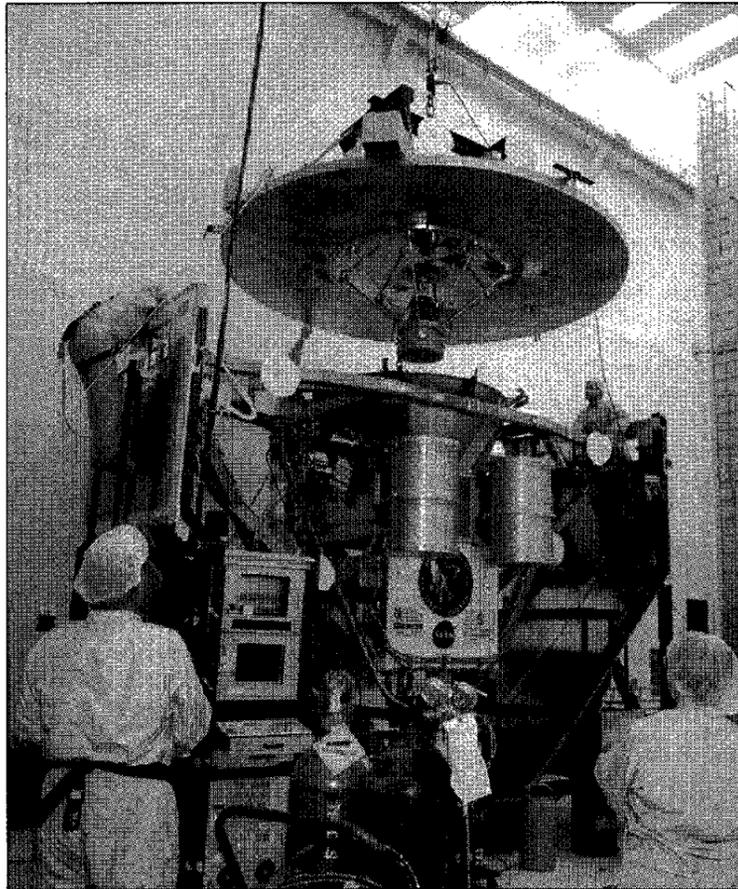
Approval of the revised assembly sequence came during a periodic Incremental Design Review held last month at JSC, in which all international partners were represented.

The first four assembly flights are not affected by the latest approved assembly sequence. These include launching the Functional Cargo Block in November 1997, Node 1 in December 1997, Service Module in April 1998 and initial human habitation flight in May 1998. Also not affected is the completion of U.S. component assembly in June 2002.

The revised assembly sequence factors in modifications proposed during the most recent IDR earlier this year, which identified changes in downstream flights dictated by changes to the Russian assembly sequence. These changes will allow Russia to sustain current Mir operations in parallel with ISS development, including the redesign and rescheduling of hardware from Zenit launchers to Proton, space shuttle, or Soyuz launchers.

The new assembly sequence also accommodates rephasing several other assembly flights, including the second U.S. Node, Japanese Experiment Module and European Space Agency Columbus Orbital Facility. Deferring the Node and JEM flights, as well as rephasing the science on early utilization flights was necessary based on power demands, weight to orbit and on orbit crew

Please see **STATION**, Page 4



NASA Photo

At Kennedy Space Center, technicians mate the Wake Shield Facility free-flyer to its carrier. WSF-3 is one of two primary payloads on STS-80. *Columbia* is scheduled for liftoff on the final shuttle flight of 1996 around Nov. 8 from Launch Pad 39B.

Committee offers safety tips

Employees soon will have the opportunity to learn safety and health tips and techniques from booths, seminars and tours designed to make JSC's Safety and Total Health Day educational and fun.

The planning committee is in the final preparations for this year's Oct. 23 stand-down for safety and health. More than 50 booths will be set up to provide safety and health information. Seminars and videos will be

scheduled throughout the day for employees to attend or watch on the JSC Television Distribution System. A concert by Max-Q is scheduled for the noon hour and the new Emergency Operations Center will be open for tours.

Other events are scheduled throughout the day in a variety of locations. A catalog of the day's activities will be distributed to

Please see **INTERNET**, Page 4

Columbia to feature double free-fly payload

By James Hartsfield

Despite a slight delay in its move to Kennedy Space Center's Vehicle Assembly Bldg. this week, *Columbia* remains on schedule for launch as early as Nov. 8 on STS-80, carrying the Wake Shield Facility and the ORFEUS-SPAS astronomy satellite.

Columbia was rolled over to the VAB mid-week to be mated with its solid rockets and fuel tank. The move had been postponed by a couple of days to allow technicians time

to replace two window panes. The two forward-most panes—among the most-flown windows on the shuttle fleet—were replaced as a conservative measure while engineers complete an analysis of how hazing and pitting affects windows that have been used on a high number of flights.

The analysis, although in a preliminary stage, seems to indicate windows that have garnered a large amount of hazing from many flights could be more susceptible to fractures. To be prudent, managers decided to replace the two window panes on *Columbia* as the engineering study progresses.

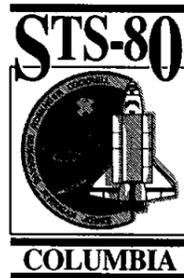
The problem deals only with the outermost window pane. Each shuttle window also has a 1.3-inch thick center pane and a half-inch thick inner pane that are unaffected.

Columbia is now expected to roll to Launch Pad 39B next week. A launch on time at 1:47 p.m. CST Nov. 8 would lead to a landing at about 6:30 a.m. CST Nov. 24.

Meanwhile, in KSC's Bay 3 shuttle processing hangar, work continues to ready *Atlantis* for launch on STS-81, the fifth Mir docking flight, in mid-January 1997. Technicians this week completed removal of the auxiliary power unit that had failed during STS-79 and sent it back to the manufacturer for analysis. Upcoming work will include the removal of the main engines from STS-79 beginning Oct. 24 and the installation of new engines beginning Nov. 5.

An investigation was completed this week on the combination wrench found inside the forward skirt of the right-hand STS-79 solid rocket booster. The investigation team found that the wrench may have been left by booster assembly workers with USBI Co. As a result of the investigation, the process for controlling tools used by USBI during assembly work will be totally renovated with much stricter procedures than were previously in place. In addition, the pre-launch procedures for inspecting areas of the boosters for tools or other debris will be enhanced to allow better lighting and more detailed checks.

Elsewhere, work continues to ready *Discovery*, now in the Bay 2 processing hangar, for a February 1997 launch on STS-82, the second Hubble Space Telescope servicing mission. Plans call for installation of the main engines next week and installation of the left-hand orbital maneuvering system pod Oct. 21.



Long hours, variety of experiments keep Blaha busy

By Natasha Calder

Working, exercising and keeping up with news back on Earth, Cosmonaut Researcher John Blaha is having no trouble keeping busy on board the Russian Mir Space Station.

Now nearly a month into his long-awaited mission aboard the Russian space station, Blaha doesn't waste a minute of his day, which typically begins around 7 a.m. and runs until about 1-2 a.m.

"In the middle of that day, about an hour to an hour and a half twice a day, is physical exercise," Blaha said in an interview earlier in the week. "And when I'm not eating and doing those types of things, we're conducting

an awful lot of experiments, both human physiology experiments, life science and microbiology and material science experiments."

Blaha said that in everything he does, he keeps one eye on his mission, and the other on the future and the upcoming International Space Station. Blaha said his primary mission is working with the Russians, learning from their experience in long-duration space flight, paying attention to its effects on the body and conducting the experiments he has been trained to conduct.



"I'm trying to absorb it all so that we can apply it to our work with our International Space Station we're trying to build with them, the Japanese and the Europeans," Blaha said.

Blaha has found no trouble in learning to work with his Mir 22 crewmates, Commander Valery Korzun and Flight Engineer Alexander "Sasha" Kaleri, despite the fact that he spent little time in training with the two cosmonauts.

"I know Valery and Sasha now pretty well, and their helping me out a lot," Blaha said.

"It seems like about once every hour they're showing me a new thing. They've made me feel very much a part of the crew."

The experiments on which Blaha and his crewmates have concentrated over the past few weeks include the Greenhouse experiment and the Biotechnology System, both of which focus on growth processes in microgravity.

Blaha already has harvested 12 of the dwarf wheat plants that were planted only 75 days ago as part of the Greenhouse experiment. The experiment is intended to study how the space environment effects plant

Please see **BLAHA**, Page 4

JSC kicks off CFC this week

JSC will kick-off the 26th annual Combined Federal Campaign on Tuesday, establishing a goal of \$460,000 for 1996. The theme for this year's 1994 CFC of the Texas Gulf Coast, of which JSC's efforts are a part, is "Look into Your Heart."

The CFC, which runs through Nov. 15, is a once-a-year voluntary fund-raising effort that gives JSC employees a chance to contribute to local, national and international health and welfare charities.

Last year, JSC employees gave \$473,000 of the \$2.3 million contributed by federal workers throughout the Houston area. This year's overall CFC goal is \$2.4 million.

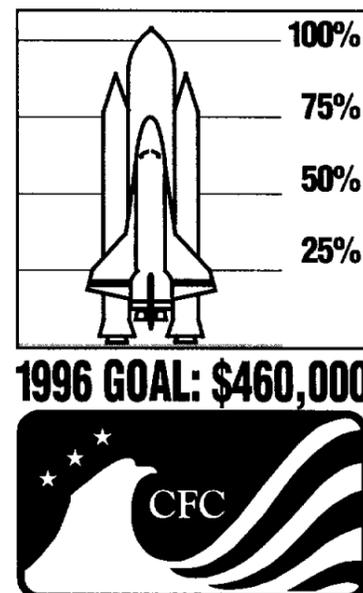
"I know that JSC employees care, and it is my sincere hope that you

will contribute as liberally as possible to this deserving combined campaign," said JSC Director George Abbey. "In making this decision, it is good to remember that you will not only be helping your community to help itself, you may be helping a neighbor or loved one when they need it most."

The CFC supports a great number of worthwhile organizations including two of special interest to JSC employees—The NASA College Scholarship Fund and Space Family Education. The scholarship provides educational assistance to selected NASA dependents and Space Family Education provides quality care for children of JSC employees.

CFC Coordinator Teresa Sullivan

said there are some additional incentives this year for employees who make a pledge. Everyone who contributes will receive a heart sticky lapel pin. Those who pledge one hour's pay per month will receive a heart sticky lapel pin and a key chain with light. Those who pledge two hours' pay will earn a lapel pin, key chain and a thermal mug. Those who pledge \$600 or more per year will receive a lapel pin, key chain, thermal mug and a personalized certificate of appreciation. In addition, those employees contributing one hour's pay per month will be eligible for the drawing for a reserved parking space for a month. One contributor's name will be drawn each week during the campaign.



Use credit card for travel cash

It's been 10 months since the JSC Travel Accounting Office instituted the American Express Automated Teller Machine Cash Advance Program, but employees aren't yet taking full advantage of the system.

"We are advocating the use of this program for all employees who require a cash advance for official travel purposes and we encourage all traveling employees to use their American Express Card for travel advances," said Deborah Conder, chief of the Payroll, Labor and Travel Accounting Branch. "The American Express Cash Advance Program is easy and convenient to use."

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JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday. For more information, call x35350 or x30990.

- Halloween dinner/dance:** Oct. 26. Tickets cost \$15.
- Texas Renaissance Festival:** Weekends through Nov. 17. Tickets cost \$11.50 for adults and \$5.25 for children 5-12.
- EAA Belize Resort Trip:** Available through Dec. 15. Cost is \$472 per person double occupancy. \$100 deposit required with final payment due 30 days before departure.
- EAA Caribbean Getaway Cruise to Puerto Rico:** Jan. 3-13, \$1198 double occupancy with airfare, \$999 cruise only. Final payment due Nov. 4.
- Sam Houston Race Park Track Pack:** \$10 value pack for \$5.25, includes Club Level seating, program, tip sheet, admission, preferred parking and gift shop discount.
- Astroworld:** One day pass cost \$22.75, two day pass cost \$34.25.
- Fiesta Texas:** One day pass cost \$22.75, two day pass cost \$34.25.
- Six Flags at Arlington:** One day pass cost \$22.75, two day pass cost \$34.25.
- Sea World:** Adult tickets cost \$24.50, children (3-11) cost \$17.25.
- Space Center Houston:** Adult \$8.75; children (4-11) \$6.25, annual membership \$25.95, family membership (up to four) \$59.95.
- Movie discounts:** General Cinema, \$4.75; AMC Theater, \$4.50; Sony Loew's Theater, \$4.75.
- Franklin Planner refills:** now taking orders for 1997 calendars.
- Sweetwater Pecans:** \$5.65 per pound.
- Stamps:** Book of 20, \$6.40.
- Entertainment '97 books:** Cost is \$25.
- Metro tickets:** Passes, books and single tickets available.

JSC

Gilruth Center News

Sign up policy: All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a NASA badge or yellow EAA dependent badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

EAA badges: Dependents and spouses may apply for photo identification badges from 7:30 a.m.-9 p.m. Monday-Friday; and 8 a.m.-4 p.m. Saturdays. Cost is \$5. Dependents must be between 16 and 23 years old.

Nutrition intervention program: A six-week program to learn more about the role diet and nutrition plays in health, including lectures, private consultations with a dietitian and blood analysis. Program is open to all employees, contractors and spouses. For more information call Tammie Shaw at x32980.

Defensive driving: One-day course is offered once a month. Cost is \$25.

Stamp club: Meets at 7 p.m. every second and fourth Monday in Rm. 216.

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. Oct. 22. Pre-registration is required. Cost is \$5.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays.

Aikido: Martial arts class meets from 6:15-7:15 p.m. Tuesday and Wednesday. Cost is \$35 per month. New classes begin the first of each month.

Aerobics: Classes meet every Monday, Tuesday, Thursday and Friday.

Ballroom dancing: Cost is \$60 per couple. For additional information call the Gilruth Center at x33345.

Country and Western dancing: Beginner class meets 7-8:30 p.m. Monday. Advance class meets 8:30-10 p.m. Monday. Cost is \$20 per couple.

Fitness program: Health Related Fitness Program includes a medical examination screening and a 12-week individually prescribed exercise program. For more information call Larry Wier at x30301.

JSC

Swap Shop

Property
Sale: '92 Fleetwood mobile home, 16x80, 3-2, W/D, central air/heat, appli, priv wooded lot in Bayview, \$18.9k or \$5k down assume payments. Doreen, 474-3653.

Sale: Friendswood, Imperial Estates II, custom 2-story 4-3-3, 3,250 sq ft, formal LV/DR, family room w/FPL, game room, .6 acs wooded lot, \$187k neg, owner. 482-1535.

Lease: La Porte, duplex, 3-2, approx 1500 sq ft, W/D conn, next to San Jac College, \$550 mo + \$550 dep. 996-0152.

Rent: Beach house, Jamaica Beach, West Galveston, 2nd row beach, all amenities, sleeps 7, winter rates/wknd/wkly rates. 488-6796.

Sale: Lots in Sommerset Place, ALDR, city water/ sewer, \$5,950 ea, possible owner fin. 997-2280.

Rent: Condo in Winter Park, CO, near ski area, 2-2, furn, hot tub/pool, sleeps 6. 488-4453.

Sale: 40 clear acres, house, barn, 15 mi East of Tyler, all amenities, \$120k. 488-5058.

Sale/Rent: Freeway Manor, 3-1-1, central air/heat, new dishwasher/roof/ceiling fans, fenced backyard, \$550 mo + dep or \$38k to purchase. Bill, 332-3649.

Sale: Timeshare condo, Vegas Strip, 2BDR/1 wk or 1 BDR/2wks, worldwide exchange, equity, take over payments, \$139.52 mo. 338-1775.

Sale: '93 Prowler 5th wheel trailer, 27-5N, loaded, ex cond, w/Reese hitch, \$11.3k obo. 470-8306.

Cars & Trucks
'93 Chevy Camaro Z-28, 6 spd, ex cond, warr, 44k mi, loaded, black, \$14.8k. x34544 or 326-3759.

'78 Jamboree motorhome, rebuilt 360 V8, 21', P/S and P/B, auto, A/C, sleeps 6, dinette, showerbath, kitchen, \$4.5 nego. 337-9218.

'79 F150 Super cab, dependable, cold A/C, 460, auto, 8' bed w/tool box, many new parts, \$1095. 409-925-7939.

'84 Chevrolet Silverado PU, two-tone blue, longbed, 6.2L diesel, auto, P/W & P/L, tilt, A/C, AM/FM/cass, \$3.5k obo, Tom, 343-0324 or 643-3802.

'86 Nissan 4x4 PU, std, 4 WD, sunroof, bedliner, \$2.7k. 470-9569.

'84 Nissan 200SX, 2 dr, P/W, etc. \$1.5k. 470-9569.

'91 Toyota Corolla DX, auto, A/C, AM/FM/cass, ex cond, 88k mi, \$5k. Levine, 286-0337.

'91 BMW 325i convertible, 51k mi, blue leather, new top, auto, cruise, trip computer, alarm, great cond, \$17.5k. Lisa, 286-0794.

'91 Infiniti G20, leather inter, CD, sunroof, 5 spd, ex cond, \$8.5k. x37633 or 660-6345.

'88 Dodge Caravan LE, V6, ex cond, records, new tires/brakes, 97k mi, \$4k. x48904 or 660-8317.

'86 Mazda PU, 5 spd, long bed, A/C, black w/gray inter, AM/FM/cass, dependable, \$1.8k. Tammy, x38853 or 488-5352.

'90 Mazda Rx-7, red, great cond, sunroof,

JSC

Dates & Data

Today

CTAP workshop: The Career Transition Assistance Program will hold a career transition workshop at 8:15 an Oct. 11 in Bldg. 45 Rm. 119. For more information call Keisha Gilbert at x34300.

Public briefing: The STS-79 crew will brief the public on its mission at 12:15 p.m. Oct. 11 at Space Center Houston.

Astronomers meet: The JSC Astronomical Society will meet at 7:30 p.m. Oct. 11 at the Lunar & Planetary Institute, 3600 Bay Area Blvd. For more information call Chuck Shaw at x35416.

Cafeteria menu: Special: baked chicken. Total Health: roast beef au jus. Entrees: deviled crab, baked chicken, beef cannelloni, steamed pollock, Reuben sandwich. Soup: seafood gumbo. Vegetables: seasoned carrots, peas, breaded okra, steamed cauliflower.

Monday

Cafeteria menu: Special: hamburger steak. Total Health: vegetable lasagna. Entrees: beef Burgundy over noodles, barbecue smoked link, vegetable lasagna, steamed fish, French dip sandwich. Soup: chicken and wild rice. Vegetables: buttered corn, steamed spinach, vegetable sticks, navy beans.

Tuesday

Cafeteria menu: Special: turkey and dressing. Total Health: roast turkey. Entrees: barbecue spare ribs, liver and onions, baked chicken, steamed fish French dip sandwich. Soup: black bean and rice. Vegetables: steamed broccoli, California vegetables, breaded squash, savory dressing.

Wednesday

Toastmasters meet: The Space-land Toastmasters will meet at 7 a.m. Oct. 16 at the House of Prayer

Lutheran Church. For more information call Jeannette Kirinich x45752.

Toastmasters meet: The Space-land Toastmasters will meet at 11:30 a.m. Oct. 16 at United Space Alliance in the Civic Room at 600 Gemini. For details call Pat Blackwell at 282-4302 or Ben Black 282-4166.

Astronomy seminar: The JSC Astronomy Seminar will meet at noon Oct. 16 in Bldg. 31, Rm. 129. An open discussion meeting is planned. For more information call Al Jackson at x35037.

Scuba club meets: The Lunarflins will meet at 7:30 p.m. Oct. 16 at Redfish Restaurant under the Kemah/Seabrook Bridge, Seabrook side. For details call Fred Toole at x33201.

Cafeteria menu: Special: Mexican dinner. Total Health: ground turkey tacos. Entrees: beef cannelloni, turkey tacos, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: peas and carrots, ranch beans, mustard greens, Spanish rice.

Thursday

Directors meet: The Space Family Education board of directors will meet at 11:30 a.m. Oct. 17 in Bldg. 45 Rm. 712D. For more information on this open meeting call Gretchen Thomas at x37664.

Cafeteria menu: Special: smothered steak. Total Health: steamed pollock. Entrees: chicken and dumplings, corned beef and cabbage, broccoli cheese quiche, steamed fish, French dip sandwich. Soup: navy bean soup. Vegetables: steamed cabbage, cauliflower au gratin, buttered carrots, lima beans.

Friday

CTAP workshop: The Career Transition Assistance Program will hold a "Communication Anxiety" workshop at 1 p.m. Oct. 18 in Bldg. 45 Rm. 128. For more information

call Keisha Gilbert at x34300.

Cafeteria menu: Special: baked meatloaf. Total Health: baked potato. Entrees: chicken fajitas, ham steak, pork and beef eggrolls, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

Oct. 22

Blood Drive: The St. Luke's Donor Coach will be at JSC from 8 a.m.-3:30 p.m. Oct. 22 by appointment only. For more information call Dan Mangeri at x33003.

Oct. 23

Safety Day: JSC will stand down Oct. 23 for Safety and Total Health Day.

Blood Drive: JSC will host an on-site blood drive Oct. 23 in Teague Auditorium to coincide with Safety and Total Health Day.

Oct. 24

Blood Drive: St. Luke's will be at JSC from 8 a.m.-noon Oct. 24 in Teague Auditorium for employees who wish to donate blood by appointment only. For more information call Dan Mangeri at x33003.

Radio club meets: The JSC Amateur Radio Club will meet at 7 p.m. Oct. 24 at the Nassau Bay City Hall meeting room. For more information call Larry Dietrich at x39198.

CLANG meets: The Clear Lake Aera Network Group will meet at 6:30 p.m. Oct. 24 at the Lunar and Planetary Institute, 3600 Bay Area Blvd. For more information call Bebe Kelly-Serrato at x39021.

Oct. 25

CTAP workshop: The Career Transition Assistance Program will hold a "Starting a Business" workshop at 8:15 a.m. Oct. 25 in Bldg. 45 Rm. 304. For more information call Keisha Gilbert at x34300.

10/27, will have shots and wormed, \$300. x48123 or 409-925-7869.

Need good home, beautiful black Lab/Border collie mix dog, 14 mos, very sweet, needs fenced yard. 992-2587.

Free 3 kittens. Heidi, x30756 or 484-4977.

Finches, Gouldians, Shaftails, Orange Cheeks. Paul, x36155 or 992-1835.

Household

King sz waterbed, heater/matt, mirror/shelf headboard, \$100 obo. 996-9646.

Sears Kenmore upright vacuum cleaner, w/7 attach, 15 xtra bags, \$40; entire coord kit set "Strawberry" motif, cookie jar, coffee cups etc, \$25; microwave oven, over-the-stove, good magnetron but needs new "smart board", \$25; VCR, repairable or for parts, \$15 w/instructions. Ed, 481-4889.

Couch, loveseat, end tables, coffee table, beige, good cond, cushions cleaned, make offer. Sandra, x37800.

Vacuum, \$25; king sz waterbed, \$100; white crib mattress, \$75; coffee table, \$50; blue loveseat, \$10; shelf center, 3 w/bottom doors, \$25; steam vaporizer, \$15; deep fryer, \$10; fondue pot, \$15; toaster, \$15; work table, \$10. x39450.

Contemporary entertainment center, white-wash finish, 2'Dx4'Hx6'W, accommodates, 30" TV, drawers/trays, smoked glass doors, ex cond, \$180 obo. Gus, x33425 or 286-3402.

Kenmore W/D, lg capacity, golden rod, \$250; qn sz waterbed w/frame, \$30; futon, full sz, wooden frame needs some repair, \$50. Jana, 244-4120 or 482-4230.

Antique mahogany chaise lounge/fainting sofa, \$950. 992-2587.

Silk tree, 6'5", Benjamin Ficus type, \$15. Susan, x48770.

Bassett solid maple twin bed and mattress, ex cond, \$200 firm. Jim, x30411 or 480-2646.

Two piece sofa, Southwest motif, non-smoker, no pets, \$250 obo. 282-9265.

King sz waterbed w/2 shelf headboard and mirror, \$250; chest of drawers and matching dresser w/mirror, \$190; nightstand, \$20. Bob, 244-4431.

Two sets of white cribs w/mattresses, ex cond, orig over \$300 sell \$200 ea. 286-4547.

Office/room dividers, fabric covered, approx 10 mixed sizes, \$50 all; double sinks and faucets on formica top cabinet 2 ea, \$45 ea. x36696 or 332-9102.

Antique Sessions Mantel clock, mahogany case, Westminster chimes, good working cond, \$150. x30021 or 479-7947.

Wanted

Want personnel to join VPSI vanpool departing MeyerLand Park and Ride lot at 7:05 a.m. for JSC. Vanpool consist of on-site personnel working the 8 a.m./4:30 p.m. shift. Don Pipkins, x35346.

Want roommate, lg 4-2-2, Seabrook, separate

loft/living area, phone, cable/fax, W/D, \$375. 474-4742.

Want 1 roommate, non-smoker, share 2-2, home in Friendswood, cable, W/D, microwave, VCR, all household privileges incl, \$250 mo no dep, all bills pd. Michael, x38169 or 482-8496.

Want housemate, newly remodeled, lg kitchen, cul-de-sac, pool and jacuzzi, non-smoker, \$290 + 1/4 electricity. Ken, x31496 or 286-7583.

Want non-smoking female roommates to share 3-2, Dickinson, \$300 mo includes utilities except phone + \$100 dep. 337-1265.

Want roommate, to share townhouse in Clear Lake, 2-2.5-2, boat slip included, pool, security gate, FPL, W/D, storage, male/female, private bath. 326-4915.

Want Marine sextant. Bill, x35420.

Want ultimate frisbee players, no experience necessary, we will teach you, every Mon/Wed, Clear Lake Park, 7:30 - 9 p.m. Dan, 282-5239 or 486-1102.

Want 16mm camera and projector, or 35mm movie camera. Michael, x38169 or 482-8496.

Want space memorabilia for private collection, flown items, e.g. utensils, clothing; autographs on photos, covers, letters, relating to Mercury, Gemini, Apollo, Skylab, Shuttle. Richard or Nancy, 481-8080.

Want double wide baby jogger. Pete, x40016.

Want used LEGOs for 8 yr old. Ed, 481-4889.

Want any Karioke equipment, tapes, CD, etc. Bob, 244-1929 or 332-3775.

Miscellaneous

MARES wetsuit, men's med, 3mm, fullbody, zipper on back, \$90 obo; DACOR booties, men's sz 9, women's sz 6, \$15ea obo; Neoprene wt belts men's/ women's, \$20 ea obo. Jeri, 333-7552.

Wedding dress, off-white silk satin "Demetrios" wedding gown w/fitted bodice and sheath skirt, overlaid w/alensson lace, pearls, sequins, detachable cathedral train, sz 6/8, \$400. 488-2276.

Marlin 30-30 Mod 336 3x9 Redfield Tracker scope w/case, \$250; Black Max 3.5Hp 125V air compressor, 20' air hose, \$225. 488-3411.

Wedding dress, sz 6/8, white beaded victorian, veil, fitted v-back w/drop pearls, long bustled train, w/cutouts, \$380. x34544 or 326-3759.

Superflex by Soloflex, ex cond, \$400. Phil, 332-2150.

Pickup cover, aluminum, sliding windows, \$375; weight bench, \$40. Bill, x32131 or 554-6242.

Scuba equipment, 2 pair fins, \$25/\$10; 1 small hood, \$25; 1 pr small gloves, \$20; 1 hand spear and floating dive flag. 480-3424.

Heavy duty wood playground equipment w/playhouse, you take down and haul, \$250 cash only. x36696 or 332-9102.

Quality childrens clothes, boys sz 12 mos - 2T, girls sz infant - 12 mos, Gymboree, Oshkosh, Gap and more; also toys. 488-3314.

Soaker hoses for your garden, various

lengths, approx 1k ft, obo. bob, x32567 or 488-3314.

Bauer Black Panther hockey skates w/blade covers, sz 8, \$65 obo. 474-3553.

Bally's President & First Lady Gold Charter membership, \$550; ladies' 28" Blue Fox jacket w/White Fox tuxedo collar and yoke trim, \$350. x39393 or 997-2280.

Assortment of mint U.S. commemorative stamps at face value, \$100. Jeff, 482-5393.

Redline 240 boys' bicycle, \$125 obo; Ajay motorized treadmill, \$75; Flex CTS weight training center, \$100 obo; 2 lawnmowers, \$24 and \$50. 544-2320.

Brush guard for '92 - '95 Toyota 4 Runners and PUs, \$140; 4 Runner Cargo compartment mat, \$30. Dannie, x39155.

Ruger-77, 243 cal, flat bolt model, scope etc., \$450; S&W model-29, 44 mag, ammo, \$335. Charles, x37678 or 661-4789.

Go-Cart, 5Hp, very good cond, \$425; Valsport soccer shoes, sz 10, ex cond, \$40; Bauer Roller Blades, sz 7, \$25; C-Cone LL bat; catchers mitt, etc., 334-2533.

Wedding dress, sz 10, \$200; knife block set, \$5; tree stands, \$5 ea; artificial Christmas tree, \$25; misc wooden items, bench/shelf/magazine rack/paper towel holder, Country and Cow decor, Coyotes, \$10. x39450.

White, long sleeve, full wedding gown, open back w/strung pearls, lots of beads and lace, veil and slip, sz 6/8, \$500 obo all. Bob or Alice, 332-4756.

Callaway Big Bertha driver, 10 firm flex graphite shaft, \$170. Doug, x38551.

Wedding gown, white long sleeve mermaid style, lots of beading, veil, sz 3/4, \$500 obo; trundle bed w/covers, new mattress, \$125. Bob or Alice, 332-4756.

Body Tech home gym, ex cond, 4 station, dual stack, \$599. 482-9576.

Inland M1 Carbine and model 94 Rifle Canadian Centennial, .30-30. 484-7335.

King sz waterbed, \$100; Vespa motorscooter, white, runs good. Steve, x39329 or 485-8930.

Evenflo crib J. Lind style, maple, ex cond, \$50; J. Lind changing tables, \$30; Rocking Horse Bear wall hanging, \$10; girls clothing sz NB - 12 mos, \$350 ea, ex cond. Susan, x48770.

Six station Wilder gym set, w/stair stepper, butterfly, leg press, gym style, \$350. Heidi, x30756 or 484-4977.

Soloflex w/leg and butterfly attachments, great cond, \$500 obo. x41927 or 996-7486.

Large HO train set w/6 Diesels, 45 cars, 88' track w/9 spur switches, buildings/trestle, 3 bridges, mood, sell as lot, obo over \$60. J. Dornbach, 326-3459.

Exterior door, 36"W, w/special pet entrance, \$65. 485-7629.

Classic utility trailer, made from late '50's or early '60's LWB stepside pickup, spare tire on front, adj tongue jack, steel flr, tail lights, hvy duty rear bumper, good tires, blue, ex cond, \$500. x30021 or 479-7947.



Picture Perfect Pickup

The STS-79 astronauts received a presidential welcome after a successful fourth docking with the Russian Mir Space Station.

Commander Bill Readdy, Pilot Terry Wilcutt and Mission Specialists Jay Apt, Tom Akers and Carl Walz delivered Astronaut John Blaha to the station and brought home Astronaut Shannon Lucid after she had spent more than six months on the Russian outpost, completing the first Phase 1 crew exchange in low-Earth orbit.

Throughout the 10-day mission, the crew took photos to share. From top to bottom, left to right:

1) The entire STS-79 crew and the Mir-22 cosmonauts pose for the traditional in-flight crew photo during a gift exchange ceremony in Mir's base block. Front row from left are, Blaha, Apt, Walz, Akers, Lucid, Readdy and Mir 22 Commander Valery Korzun. Back row from left are, Wilcutt and Mir 22 Flight Engineer Alexander Kaleri.

2) Wilcutt travels from *Atlantis*' docking module to Mir toting a water bag that will be used to supplement the Mir drinking water supply.

3) Akers, working in Spacehab, goes over an inventory of supplies that will be transferred to Mir during the five days of docked operations.

4) Lucid and Kaleri prepare to move Lucid's cosmonaut suit from Mir to *Atlantis*, officially marking her departure from Mir and arrival as part of the *Atlantis* crew.

5) From left, Walz and Apt work on the Cartilage in Space experiment, a component of the Biotechnology System located in the Spacehab module. The cartilage experiment

investigated tissue formation and basic cell-to-cell interactions in a low-gravity, stationary-cell-culture environment, and was transferred to Mir for continued studies by Blaha.

6) Readdy looks over a checklist at the commander's station on *Atlantis*' flight deck. Among his many other duties as commander, Readdy controlled the orbiter during a series of maneuvers during docking and undocking operations.

7) Mir is backdropped over a storm in the "Roaring 40s" near Heard Island in the South Indian Ocean.

8) During off-duty time, Apt, a licensed amateur radio operator, talks to ground contacts via the Shuttle Amateur Radio Experiment. The radio was used for communications between *Atlantis* and Mir during docking and undocking activities.

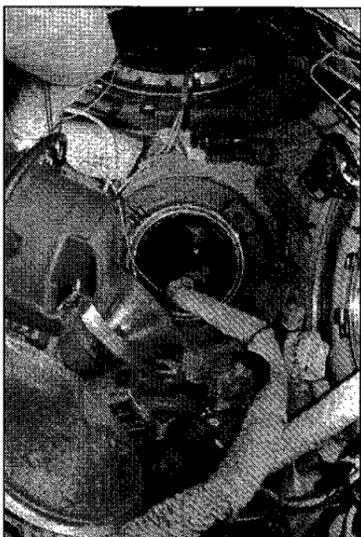
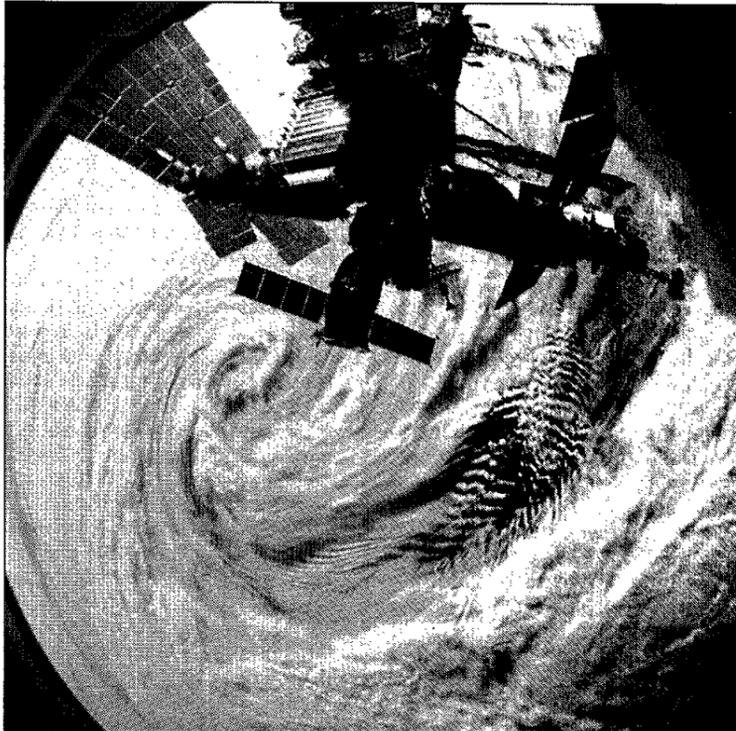
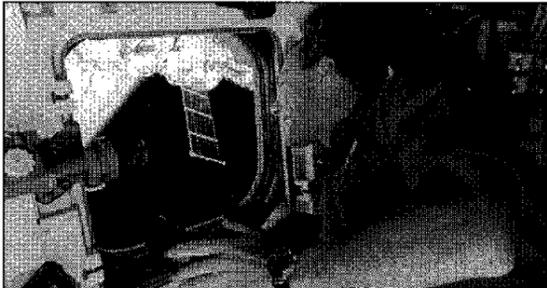
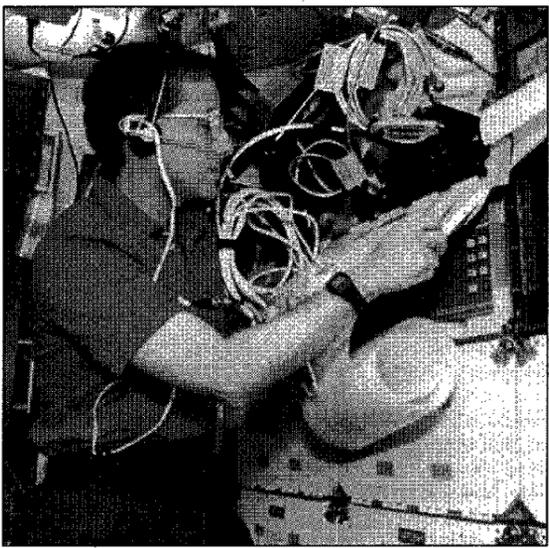
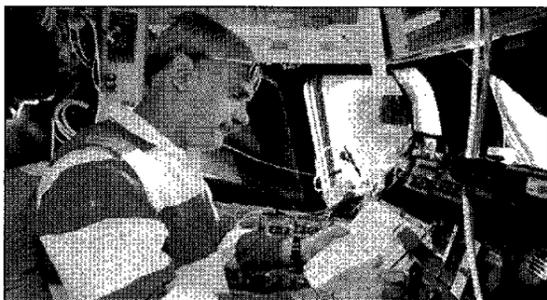
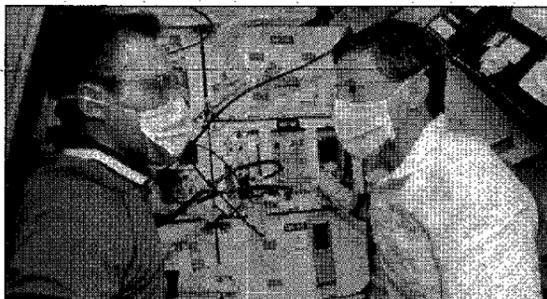
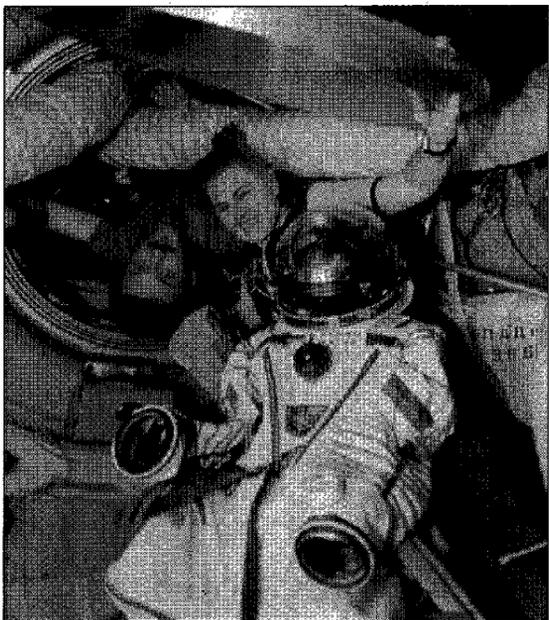
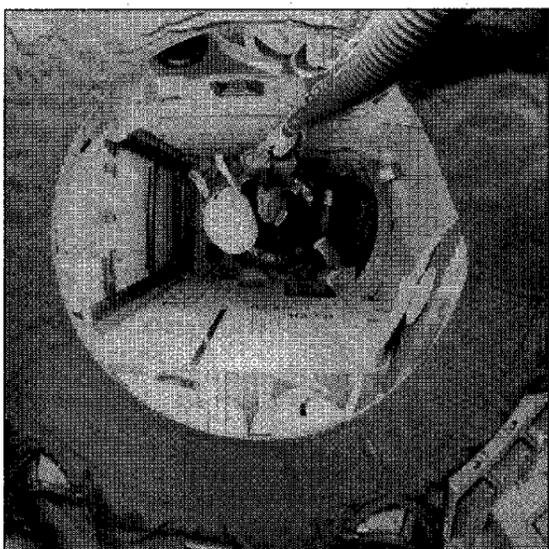
9) Walz totes a bag carrying a space suit that was used by the cosmonauts.

10) Commanders Readdy and Korzun reunite soon after the *Atlantis*-Mir docking. Both commanders spent months in training together before their flights.

11) Wilcutt, on *Atlantis*' aft flight deck, takes photos of Earth for study by observations scientists at JSC. Several components of the docked Mir space station are in the background.

12) Korzun ventures into a node connecting multiple elements of the Mir complex.

13) Akers, in the Mir base block, transfers the Protein Crystal Growth experiment onto Mir. The experiment was set up in the Priroda module. □



International travelers may increase advance limit

(Continued from Page 1)

ATM's are provided on site for traveler's convenience with a \$500 per day withdrawal limit. Currently, the on-site ATM's are set with a \$200 maximum withdrawal, per transaction and the JSC Credit Union is looking into increasing this limit to \$300 per transaction.

"If an employee is authorized a travel advance amount higher than \$200, it will require two, or more, sequential transactions to withdraw the appropriate amount," Conder said.

When the ATM option of the American Express program was implemented at JSC in January, all government charge cardholders were authorized an ATM advance limit of \$300, per day, for use in performing official travel within the U.S., Conder said. The \$300 authorized amount is normally enough

to cover most official domestic travel situations. Employees performing frequent official international travel may request an increase in their ATM cash advance limit to \$500, in any 24-hour period, not to exceed \$1,500 in a seven-day period. Employees requiring this increase should contact the JSC program coordinator of the American Express program before traveling.

"American Express normally responds to a written request from the program coordinator within 48 hours and the increased amount may then be accessed by the traveler," Conder added. "It is important to plan in advance for official international travel to allow enough turn around time for any required actions."

Employees who do not have a government-issued charge card are encouraged to apply

for one if they plan on performing official travel. Applications are available for pick up in the Travel Funding office in Bldg. 1, Rm. 122. Completed applications may be submitted to LF341/Travel Claims, for processing, after which they will be forwarded to American Express. Employees will receive the card in the mail at their home seven to 10 days later. A Personal Identification Number is sent to the employee in a separate mailing.

"You must have a PIN to obtain a cash advance from an ATM," Conder said.

Employees who do not have a PIN, or have lost or forgotten it, may call 1-800-227-4669 and American Express will issue a new PIN over the telephone.

"We encourage all employees with an American Express card to read the guide thoroughly," Conder said. "The American

Express Cash Advance Program has worked extremely well for government employees. It is important for all traveling employees to understand how the program works in order to gain maximum benefits from the program. The ATM cash advance program offers travelers a readily obtainable source of cash for travel expenses that cannot be covered by the charge card itself. Travelers are encouraged to use the card to charge official Government travel expenses whenever possible."

For more information regarding the Government charge card program, contact Conder at x35805, or the program coordinator Nancy Porter, at x34011. Hard copies of the guide also are available for pick up in Bldg. 1, Rm. 122 or on the Internet, at: <http://www.jsc.nasa.gov/cfo/atm.html>

Blood drive set during Safety, Total Health Day

Special arrangements have been made for JSC workers to donate blood as part of Safety and Total Health Day on Oct. 23.

Employees wishing to donate blood may visit Teague Auditorium between 7:30 a.m.-3:30 p.m. Oct. 23. Employees that will participate in the Safety and Total Health Day Fun Run will not be able to give blood, so St. Luke's personnel will make additional trips to JSC to collect blood.

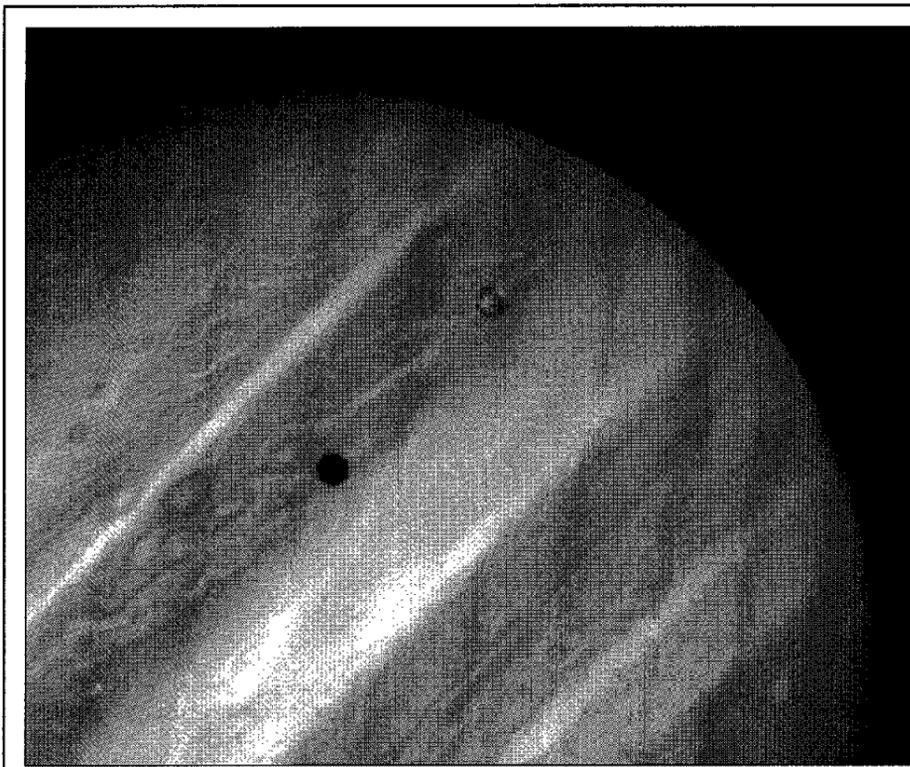
St. Luke's Donor Coach will be at JSC from 8 a.m.-3:30 p.m. Oct. 22. In addition, employees can donate between 8 a.m.-noon on Oct. 24 in Teague Auditorium. Appointments are required on Oct. 22, due to limited beds on the coach. Appointments are necessary on Oct. 23, or 24 only, if employees plan to donate platelets or plasma. No appointments are necessary for whole blood donations. The previous two blood drives have had record turnouts, and the center hopes to do even better this time. Employees are encouraged to "bring a buddy."

Generally, donors can give blood every eight weeks. In some cases a donor may be deferred if, for example, their blood is low in iron or they've been on certain medications. If prospective donors have questions about how a medical condition may affect their ability to give blood they can call St. Luke's Blood Donor Center at 791-4483.

The process starts with a blood sample. Afterwards, one pint of blood is drawn. The actual collection of blood usually takes seven to 10 minutes, with the whole process taking approximately 30 minutes under normal circumstances. The donated blood undergoes several tests, including the tests for hepatitis and HIV. If there are reactive test results donors are notified by mail. All results are kept confidential. Usually there are no negative reactions to giving blood, but trained personnel are available in case a donor becomes light-headed.

Also, those who donate blood will once again receive a free T-shirt.

For more information about the JSC On-site Blood Drive during Safety and Total Health Day, or to make an appointment, call Dan Mangieri at x33003.



The Hubble Space Telescope captures Jupiter's volcanic moon Io passing above the turbulent clouds of the giant planet. The conspicuous black spot on Jupiter is Io's shadow.

Hubble takes rare portrait of Jupiter, Io

NASA's Hubble Space Telescope has taken a rare joint portrait of Jupiter and its volcanically moon Io, as the moon passes above the clouds of the giant gas planet.

The image, taken on July 24, is one of a series of images of Io being taken by Hubble to complement close-up images of Jupiter currently being taken by NASA's Galileo spacecraft. The first images of Io from Galileo have shown active volcanic plumes and obvious surface changes since the two Voyager spacecraft imaged the moon during their Jupiter flybys in 1979.

The conspicuous black spot visible in the crisp black-and-white image of Jupiter is Io's shadow. The shadow, about the size of Io, sweeps across the face of Jupiter at 38,000 miles per hour as the moon orbits 261,600 miles overhead. The smallest details visible on Io and Jupiter are about 100 miles across. Bright patches visible on Io are regions of sulfur dioxide frost. Io is roughly the same size as Earth's Moon.

Though the images from Galileo show much finer detail, Hubble provides complementary information because it can observe Io at ultraviolet wavelengths not seen by Galileo. Hubble also can observe Io at different times than Galileo, and can view Io

under more consistent viewing conditions.

Meanwhile, tape playback of data from Galileo's flyby of Ganymede began as scheduled Sept. 10 and is proceeding as planned. Transmission of images from the encounter, including many images of Io, will continue over the next two months. The images of Io are part of an effort to spot erupting volcanoes on that moon.

The spacecraft is operating properly and executing commands. Project engineers are running tests on an apparent anomaly that occurred early last week with the radio receiver. On two occasions, the receiver failed to lock onto radio signals sent from Earth. The radio has since operated normally. One possible cause for the problem is radiation from Jupiter. A fully redundant radio receiver is on board.

A special sequence designed to use thermal distortion in an attempt to free the filter wheel on the photopolarimeter radiometer instrument was executed as planned but was unsuccessful. The photopolarimeter will be operated in its current position for the Nov. 4 encounter of Callisto, performing radiometry only, project officials said. Additional attempts to free the wheel probably will be made after the flyby.

JSC needs tutors, mentors for Houston area students

By Mae Mangieri

Employees who are interested in making a difference in a student's life now have the opportunity.

Through JSC's Education Outreach Program, employees may volunteer as tutors or mentors.

The following schools in the Clear Creek and Houston Independent School Districts are looking for volunteers for the 1996-97 school year:

Hall Elementary School in League City: More than 30 at-risk students in grades 1 through 5 would greatly benefit from one-on-one tutoring. The areas of need vary from math, reading and reading comprehension, writing and spelling. Students are available for tutoring between 8 a.m.-5 p.m.

League City Elementary School: Volunteers are needed for a one-on-one math and reading mentoring program called Help One Student to Succeed. HOST mentors follow lesson plans which are structured to match student's ability level and learning style. Volunteers may mentor between 8:30 a.m.-3 p.m.

Austin High School: Bilingual, math, reading and writing tutors are needed to help 12th grade students who are scheduled to re-take the Texas Assessment of Academic Skills Test in order to graduate from high school. Volunteers may choose to tutor Monday through Thursday from 3:15-4:15 p.m., or at a one-day tutoring session on Oct. 19, from 9 a.m.-1 p.m.

Jack Yates High School: Mentors are needed for ninth grade students in the "Third Ward Futures" mentoring program that encourages students to stay focused on the college-bound track in order to receive a \$4,000 scholarship upon graduating from high school. The mentor and student should expect to be together from the first year of high school through the first year of college; however, a one-year commitment also is welcomed.

Most volunteers spend at least one hour each week at the school working one-on-one with a student. Schedules are arranged with volunteers so they are assured of working at a specific time on a regular basis. The schools will hold volunteer orientation meetings to discuss tutoring and mentoring responsibilities and how to work with children in public schools.

With supervisory approval, civil service employees may charge their time away from work, including travel time, to a special education labor code. Civil service employees may charge up to 40 hours per calendar year to the special code. For more information, call the Education Outreach Program at x32929.

Station stays on budget

(Continued from Page 1)

time availability.

The Incremental Design Review allowed NASA and its space station partners additional time to complete engineering, subsystem and technical analyses of the proposed assembly sequence to confirm it would be executable. This assembly sequence revision maintains the U.S. capability to complete assembly of its components within both the \$2.1 billion annual spending cap and the \$17.4 billion developmental run-out cost agreed to with Congress and the White House.

Blaha spends free time with movies

(Continued from Page 1)

growth, its metabolic systems and any chemical and structural changes which may occur during growth. As part of the BTS experiment, work growing cartilage cells in the low-gravity station environment also continued. The experiment hopes to investigate long-term on-orbit cell growth.

Blaha also will continue Earth observation, using cameras on board Mir to document changes on the Earth's surface. Recent observation areas include the Panama Canal zone, the central Namibian Coast, the South Falkland Island ocean currents and South Africa.

Aside from the daily regime and the host of science experiments being conducted on Mir, Blaha said he makes time to contact HAM

radio operators across the United States to stay abreast of current news and catch up on one of the things he misses—sports.

"I get on the HAM radio every time we come over the states, and I learn all sorts of things," Blaha said. "I learned the Yankees beat the Texas Rangers in the 13th inning, and I heard about the Cowboy game shortly after the Monday night game ended against Philadelphia 22-19."

And for entertainment and relaxation, Blaha reports that he brought with him to the station his favorite music, about 50 videos and a photo album with roughly 500 pictures put together by his friends and family. Sight-seeing from Mir also is high on his list of leisure activities.

Space News Roundup

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Editor Kelly Humphries
Managing Editor Karen Schmidt
Associate Editor Natasha Calder

Internet offers safety day information

(Continued from Page 1)

employees prior to Safety and Total Health Day.

The all-day event will be a time for employees to spend the day discussing, learning and becoming more aware of safety and health issues. All civil servants and contractors, both on site and off site, are encouraged to participate to the maximum extent possible. While the emphasis is on institutional safety and the Total Health employee wellness program, organizations are encouraged to include other safety and health topics.

"For example, we are, statistically, hurting more people at home and on the roads than we are at work, so we have the option to spend time during the stand-down day discussing those important safety

issues," said Larry Neu, chairman of the planning committee.

In addition to the specific topics being developed by each organization, the Safety and Total Health home page has a wealth of information for managers to use in planning their employees' day, and its use is encouraged. This information is available at: <http://www.jsc.nasa.gov/jsc/safety/safeday.html>

"It's shaping up to be a great day," Neu said. "I have been in contact with a lot of different organizations on and off site and it's impressive to see the energies and ideas going into making this event important to the employees' health and safety needs. I urge everyone to use this day to the fullest advantage."

For more information on Safety and Total Health Day call x45078.